AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A pulse valve (10) with a closing body (18) that cooperates with a valve seat (22) by at least a valve spring (24) and, in a first switching position, establishes a flow connection between a supply channel (12) and a discharge channel (14) and, in a second switching position, blocks the flow connection, the closing body (18) periodically moving in a reciprocating motion (82) between the two switching positions during an actuation of the pulse valve (10), wherein a hydraulic damping to a movement of the closing body by a throttle gap (70) occurs in a damped range (62),

wherein the closing body is connected via a rod (56) with a damping disk (54) made of ~~lightweight~~ structural material, the damping disk provided in a damping cylinder (50) that is open on an end face, the damping cylinder forming around a circumference of the damping disk the throttle gap while the damping disk moving inside the damping cylinder, and

wherein the damping disk exits the damping cylinder shortly before the closing body reaches the second switching position.

2. (currently amended) The pulse valve (10) as recited in Claim 1, wherein the reciprocating motion progresses from the first switching position to

the second switching position sequentially through the damped range, a transition region (66), and an undamped range (64) that extends for approximately 0.5 millimeters before the closing body reaches the second switching position.

3. (previously presented) The pulse valve (10) as recited in Claim 2, wherein a bypass (90) extending in parallel with the throttle gap (70) is actuated to open along the undamped range (64).

4. (previously presented) The pulse valve (10) as recited in Claim 2, wherein the throttle gap expands during the transition region as the reciprocating motion progresses towards the second switching position.

5. (previously presented) The pulse valve (10) as recited in Claim 4, wherein the hydraulic damping is attained again when the damping disk re-enters the damping cylinder (50).

6. (Original) The pulse valve (10) as recited in Claim 4,
wherein
the flow cross section of the damping cylinder (50) expands continually at its open end.

7. (Original) The pulse valve (10) as recited in Claim 6,

wherein

the damping cylinder (50) includes an inner chamfer (68) at its open end.

8. (Withdrawn) The pulse valve (10) as recited in Claim 6,

wherein

the damping cylinder (50) includes at least one inner groove (72) and/or recess (74, 78) at its open end that expand in the direction toward the open end face.

9. (Withdrawn) The pulse valve (10) as recited in Claim 8,

wherein

the flanks of the groove (72) and the contour (76, 80) of the recess (74, 78) have a bent shape.

10. (Withdrawn) The pulse valve (10) as recited in Claim 4,

wherein

the damping cylinder (50) includes an inner annular groove (84), the width of which is greater than the thickness of the damping disk (50) at its circumference.

11. (Withdrawn) The pulse valve (10) as recited in Claim 10,

wherein

the flanks of the annular groove (84) are transition regions (66).

12. (previously presented) The pulse valve (10) as recited in Claim 1, wherein the damping disk (54) includes an axially projecting edge (88) around its circumference.

13. (previously presented) The pulse valve (10) as recited in Claim 1, wherein the damping disk (54) has a surface that is not circular.

14. (previously presented) The pulse valve (10) as recited in Claim 1, wherein the damping disk (54) is very thin and has a fine, perforated structure.

15. (currently amended) The pulse valve (10) as recited in Claim 14, wherein the cross section of [[the]] holes (94) of the fine, perforated structure is in the micrometer range.

16. (withdrawn) The pulse valve (10) as recited in Claim 1, wherein the damping disk is a fluid-permeable diaphragm (96) that is connected around its circumference with the valve housing (16), while its central region is

carried along in the direction of the reciprocating motion (82) by valve stem (26) connected to the closing body, and the hydraulic damping is produced by the diaphram.

17. (withdrawn) The pulse valve (10) as recited in Claim 16, wherein
the diaphragm (96) is semi-rigid and elastic.

18. (withdrawn) The pulse valve (10) as recited in Claim 16, wherein
the elasticity properties of the diaphragm (96) are matched to the desired damping characteristics of the closing body (18).

19. (previously presented) The pulse valve (10) as recited in Claim 1, wherein
the damping disk is a diaphragm (96) having a fine-meshed network structure or woven structure.

20. (previously presented) The pulse valve (10) as recited in Claim 14, wherein the fine-meshed network structure forms a mesh with cross section in a micrometer range.

21. (withdrawn) The pulse valve (10) as recited in Claim 16,

wherein

the diaphragm (96) is made of a composite material.

22. (Withdrawn) The pulse valve (10) as recited in Claim 1,

wherein

the undamped part (64) of the reciprocating motion (82) is formed by a passage (98, 100) between the valve stem (26) or the rods (56) connected therewith and the damping disk (54) and the diaphragm (96).

23. (Withdrawn) The pulse valve (10) as recited in Claim 1,

wherein

the damping disk (54) and the diaphragm (96) are coaxial with the valve stem (26) in the direction of flow in front of or behind the closing body (18).

24. (previously presented) The pulse valve (10) as recited in Claim 1, wherein a surface of the damping disk (54) is larger than a cross section of the closing body (18).